Original Research Article

A clinical study on the management of chronic anal fissure

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Received: 11-06-2021 / Revised: 27-07-2021 / Accepted: 21-08-2021

Abstract

Background: Fissure in ano is one of the most common benign anorectal disorder encountered in surgical practice causing considerable morbidity to the patient.This study is an attempt to clinical evaluation of chronic anal fissureand evaluation of different modalities of treatment which includes conservative management and surgical management. **Methods:** This is a prospective cohort study conducted in department of general surgery, government general hospital,Ongole conducted during period of October2018 to September 2020.A totalof 180 patients who met the inclusion criteria were categorized into conservative management using 2% Diltiazem ointment and surgical management of either manual anal dilatation and lateral internal sphincterotomy. All patients were analyzed in terms of healing of fissure and relief of symptoms, post op complications, hospital stay, recurrence were studied. **Results:** 85 patients were randomized to conservative management. Out of 85 patients 60 patients got symptomatic relief and 25 patients had recurrence of symptoms. 2% diltiazem ointment has asuccess rate of 76% at the end of 6weeks.Side effects are minimal.Lateral internal sphincterotomy is the most efficient surgical procedure for chronic anal fissure which is associated with 96% success rate and associated with less complications when compared to manual anal dilatation.

Key words: Chronic anal fissure, 2%diltiazem ointment, manual anal dilatation (MAD) and lateral internal sphincterotomy (LIS).

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Introduction

An anal fissure is a common anorectal problem. It is a longitudinal tear distal to the dentate line. They are usually located in the posterior or anterior mid line. The main presenting symptom is pain during defecation with variable amount of bleeding, causing emotional stress and effects the quality of life. Spasm and persistent hypertonia of internal anal sphincter may develop in chronic cases leading to impairment of blood supply to the affected area and subsequent poor wound healing and recurrence. A chronic fissure is usually deeper and has exposed internal sphincter fibers at the base.It is associated with hypertrophied anal papilla in the proximal aspect and with sentinel pile at the distal aspect. Treatment of anal fissure is focused on reducing the pressures of internal sphincter with the help of physical or chemical methods. The treatment strategy of chronic anal fissure varies from medical management to surgery. The American Society of Colon and Rectal Surgeons guidelines recommend that for the initial nonsurgical management of anal fissure.

Application of pharmacological agents such as glyceryl trinitrate or calcium blockers and botulinum toxin injection are the other treatment strategies. Surgical techniques such as manual anal dilatation or lateral internal sphincterotomy,effectively heal most chronic anal fissures within few weeks.

Lateral internal sphincterotomy has been the preferred method for treating chronic anal fissure.

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Aim of the Study

Is to evaluate the effectiveness of medical management,i.e2% Diltiazem ointment and surgical management i.e manual anal dilatation and lateral internal sphincterotomy in the management of chronic anal fissure.

Material and methods

Patients presenting to surgical outpatient with acute anal fissure and, Patients with anal fissure associated with sentinel pile, are included in the present study.Anal fissures complicated by fistula, and hemorrhoids and patients who underwent previous anorectal surgery are excluded from the study.

Data was collected from patients who came to surgical outpatient of Department of General Surgery, Govt. General Hospital, Ongole, with anal fissure and treated with 2% Diltiazem and who were admitted for chronic anal fissure and were treated with manual anal dilatation and lateral internal sphincterotomy were included in the study.All patients were advised laxatives and adequate hydration and high fiber diet after following medical or surgical management. All patients were followed every fifteen days for a period of three months.The study was conducted for a period of 24 months i.e from October 2018 to September 2020.

Operative procedures

Manual anal dilatation

Is described by Recaimer in the treatment of anal fissure,carried out under spinal anaesthesia and patient is placed in lithotomy position [4].The dilatation is done upto four fingers in place and stretched for four minutes[5].

Lateral internal sphincterotomy

Eisenhammer was the first person to incorporate internal sphincterotomy for anal fissure treatment. The procedure of internal sphincterotomy can be performed in posterior midline, but it is associated with key hole deformity. Eisenhammer advised lateral position for sphincterotomy by dividing one half of muscle in open technique[13]. In 1969, Notaras advised closed technique to perform internal anal sphincterotomy [17].

In this study we adopted open technique under spinal anaesthesia.

Table 1: showing Age distribution of Anal fissure

S NO	AGE GROUP	MALES	FEMALES	TOTAL	PERCENTAGES
1	11-20	2	6	8	4.4
2	21-30	21	32	53	29.4
3.	31-40	24	40	64	35.51
4.	41-50	18	28	46	25.5
5.	51 -60	3	6	9	5
	TOTAL	68	112	180	100s

Table 2: showing Location of Fissure

LOCATION	MALE	FEMALE	TOTAL
POSTERIOR	58	82	140
ANTERIOR	12	25	37
LATERAL	2	1	3
TOTAL			180

Table 3: showing symptoms of Chronic anal fissure

Pain on defecation	88
Constipation	118
Bleeding on defcation	17
Pain and bleeding	18
Sentinal pile	17

Table 4:showing complications following manual anal dilatation

Complication	No of cases	Percentage
Flatus incontinence	14	22.5
Haematoma of perianal region	9	7.5%
Wound infection	0	0

Table 5: showing complications following lateral internal sphincterotomy

Complications	No of cases	Percentage
Flatus incontinence	9	15%
Haematoma of perianal region	2	3.3
Wound infection	2	3.3

Table 6:Association between hospital stay and type of surgery

Type of surgery	Hospital stay Less than 4 days	Hospital stay More than 4days	Percentage
MAD	51	9	15
LIS	58	2	3.3

Table 7: Complications of Lateral Internal Sphincterotomy

Complication	No of Cases	Percentage
Flatus incontinence	9	15
Haematoma	2	3.3
Wound infection	2	3.3
Recurrence of symptoms	0	0

Table 8: Complications of manual anal dilatation

Complications	No of cases	Percentages
Flatus incontinence	14	22.5
Haematoma of peri anal region	9	7.5
Wound infection	0	0
Recurrence of symptoms	4	6.6

Analysis and results

This study was conducted on 180 patients, who were treated for Acute anal fissure and chronic anal fissure in the Department of General surgery, Government General Hospital, Ongole from October 2018 to september2020.

Age and Sex Distribution

The age and sex distribution of 180 patients were studied. Out of 180 patients 102 were females and 78 were males.Female to male ratio is 1.3:1. Lowest age for this study is 18 years and highest age in this study is 58 years.

Symptoms and signs

Majority of patients have pain during defecation and bleeding on defecation, constipation other symptoms were itching, mucus discharge, and skin tag.76% of patients presented with pain on defecation and 32 % patients presented with bleeding on defecation. Skin tag is present in 11% of patients. In our study posterior anal fissure is seen in 138 patients (78%) and anterior anal fissure is seen 42 patients (22%).

Medical Management

Totally 85 patients of acute anal fissure out of 180 patients were managed by medical and conservative method of treatment. All

patients were advised high fiber diet and adequate hydration and laxatives. 85 patients were put on 2 % Diltiazem ointment twice daily topically. All patients were followed weekly in outpatient department for 1month, all patients were followed every 15 days for 2 months. Results were studied in terms of relief of pain and healing of fissure.A total of 85 patients, 60 patients had relief of symptoms at the end of 6weeks. Other 25 patients had persistent pain and side effects such as headache.

As attenuation of anal resting pressure is temporary, the benefit of Diltiazem cream is not permanent.Healing rate of 2% diltiazem ointment in our study is only 71%.

Diltiazem, a non-dihydropyridine calcium channel blocker,induces vascular smooth muscle relaxation and dilation. Topical 2% diltiazem reduces maximum resting pressure and effect lasts for 3-5 hrs.Side effects are minimal include perianal itching and dermatitis.

In this study 71% of patients treated with Diltiazemwere symptom free at the end of4 weeks. Patientswho did not have symptomatic relief were subjected to lateral internal sphincterotomy.However, the effects of Diltiazem are reversible and problems reappear once medication is discontinued.

Surgical management

Totally 120 patients were managed by surgical management. 60 patients were managed by manual anal dilatation and 60 patients were managed by lateral internal sphincterotomy under spinal anaesthesia.Post operatively all patients were advised sitz bath along with laxatives.Duration of hospital stay and relief of symptoms and early complications were recorded from first postoperative day. All were followed during hospital stay and at the end of 1st and 3rd and 6thweek.Duration of surgery was approximately 15 to 30 minutes.

Complications of manual anal dilatation and lateral internal sphincterotomy were compared. Out of 120 patients 60 pts underwent manual anal dilatation and 60 pts underwent lateral internal sphincterotomy. Duration of hospital stay after each operative procedure was analyzed for those who stayed less than 4 days and those who stayed more than 4 days. Out of 60 patients who underwent MAD type of surgery6 Patients stayed more than 4 days (10%). In patients who underwent LIS type of surgery only 2 patients stayed more than 4 days in our study (3.3%). Post-operative haematoma was seen in 8 patients who underwent MAD type of surgery (13.5%) and only 2 patients has showed hematoma in LIS type of surgery(3.3%). In patients who underwent MAD type of surgery 42patients had complete healing of ulcer (72%).11patients had incontinence for stools and flatus (18.3%). And 4 patients had recurrence of symptoms (6.6%). Whereas in patients who underwent LIS type of surgery 58 patients(96%)had complete healing of anal fissure and only 2 patients developed flatus incontinence.

Discussion

Anal Fissure is a common disorder seen in day-to-day surgical practice. It causes great discomfort and pain to the patient. It causes considerable morbidity and effects the quality of life. The most effective management is reducing internal anal sphincter tone in surgery. Lateral internal sphincterotomy is the gold standard in the treatment of chronic fissure.It involves partial division of internal anal sphincter away from the fissure. Calcium channel blockers (4), lower resting anal pressure and promote fissure healing. In the present study,evaluation of medical management and surgical management is done. Effectiveness of each modality of management and relief of symptoms and complication, recurrence of symptoms was evaluated.

Medical management used in this study is 2% dilatation gel. The surgical technique evaluated in this study were manual anal dilatation and lateral internal sphincterotomy. In present study 180patients were studied, who attend surgical op with anal fissures entinel pile and 85% patients were treated with conservative management i.e2% diltiazem gel. The age distribution, relief of symptoms and failure of symptoms were evaluated. The most common Age group affected in this study was 31-40 yeas (36%). Which coincides with the data by Goligher et al(6). Incidence of chronic fissure is equal in both sexes. Mcdonald et al has shown a higher female percentage of patients of anal fissure. But in our study (13), in our study higher incidence isseen in female compared to males. Mcdonald et al[7] has shown a higher female percentage of patients of anal fissure. But other studies by Lock&Thombson et al[8]noted male preponderance. In our study posterior anal fissure is located in 78% of patients, and anterior anal fissure is seen in 22% of patients. But in the study conducted by Lund et al[9] showed posterior anal fissure in 76% of patients of patientsand anterior fissure in 22% of patients. The proportion of anterior anal fissure is much higher in female patients[8].

In our study, out of 85 patients who were treated with Diltiazem 2% gel, 60 patients (71%) got symptomatic relief and healing of fissure at the end of 6 weeks. Out of 85 patients 14 patients were suffered with headache and 9 pts suffered with perianal itching.Patients who did not get symptomatic relief were subjected to surgical management. However, effect is reversible and problem reappeared, when medication is discontinued in 25patients.

Diltiazem gel, a calcium channel blocker causes smooth muscle relaxation and reducing resting anal fissure. A study by Medhi et al described Diltiazem gel is efficacious in the treatment of acute anal fissure (6). In our study 71% of patients were symptom free at the end of 6 weeks and 29% of patients did not get symptomatic relief as the effect is reversible and problem reappeared, when medication is discontinued. Healing rate of anal fissure using Diltiazem gelin various studies ranged from 47 to 89%. The healing rate of 2% Diltiazem gel in our study is71%. Patients who did not get symptomatic relief were subjected to surgical management.However, effect is reversible and problem reappeared, when medication is discontinued in 25patients. Failure rate in our study is 29%.Side effects of Diltiazem gelare minimal include headache, itching and dermatitis.In present study total 95 patients and failure cases 25 of medical management, total of 120 patients were treatedwith surgical management. Out of these 60 patients were treated with manual anal dilatation and 60 patients were treated with lateral internal sphincteromoy.In this study we made comparison of two operative procedures for chronic anal fissure, manual anal dilatation and open internal anal sphincterotomy. Outcome of each operative procedure, the advantages of lateral internal sphincterotomy and manual anal dilatation, complications of two operative procedures were studied.

Out of 120 patients 60 patients underwent manual anal dilatation. Analysis of results of manual anal dilatation in terms of duration of hospital stay, symptomatic relief, healing of fissure i.e epithelization of fissure were evaluated in the present study. These were carried out on a weekly basis for a period of 6 weeks.By the end of 6 weeks,we noted that 38 patients(63%) have no symptoms with complete healing of ulcer.In the remaining 22 patients(37%)were having somedegree of incontinence for stool and flatus,3 patients had incontinence for flatus onlyand 12 patients (21%) had persisting ulcer and 2 patients developed signs and symptoms of recurrent anal fissure in4th post op week.

In the present study we found that manual anal dilatation resulted in complete healing of fissure in only 63% of patients only. This is much lower than previous studies done by Marby et al[11] and Giebel et al [12], which were showing success rates in manual anal dilatation ranging from 87 to 100%but with inconsistent recurrence rates ranging from 0 to56%. This variation noted in the literature is due to higher inter operative variability. There is no single reliable way to standardize uncontrolled manual anal dilatation and both external and internal anal sphincters can be disrupted and damaged in a irregular manner.In present study patients who underwent lateral internal sphincterotomy had complete healing of fissure in 96% of patients and rapid pain relief in 95% of patients. Oh et al reported immediate pain relief in 95% of patients. Hananal and Gordon reported healing rate of anal fissure at the end of 6 weeks is 94.4%.In our study flatus incontinence is seen 3patients (5%) which is less than studies conducted by Nyam et al [16].

In a sample of 120 patients, during following up period of six months, 4 patients developed recurrence, 116 did not develop recurrence. Patients who had undergone MAD type of surgery, 4 patients

developed recurrence, whereas in patients who underwent lateral anal sphincterotomy did not develop recurrence.

Complications were more commonly seen in manual and dilatation than in cases of anal sphincterotomy.Those patients who underwent LIS, had not developed complications and improved well, in terms of epithelization of fissure and recovery of symptoms. Post op complication, like hematoma and Nocturnal soiling and recurrence were more in, MAD underwent patients. In manual anal dilatation, patients were followed for prolonged period and complication were treated while in lateral internal sphincterotomy the complication are less.

Conclusion

A total of 180 patients were studied from October 2018 to September 2020. These patients broadly categorized under medical management and surgical management.

In our study females are more commonly affected than males in the ratio of 1.3:1.The most common age group effected are 31-40 years age group. Most common clinical presentation is pain during defecation and constipation.Most of the fissures are located in the posterior midline. Although posterior fissure is common in females' anterior fissure is more commonly seen in females.

Medical management using 2% Diltiazem ointment can be offered as the first line of treatment for acute anal fissure management. If this fails can be offered surgical management. 2% Diltiazem ointment had an efficacy of 71% success rate at the end of 6 weeks and failure rate is 29%. Complications of 2% Diltiazem is headache and perianal itching which occurred in minority of patients. Medical management may be applied as the initial choice of treatment with chance of cure in early cases, but less effective than surgery.

Lateral internal sphincterotomy is the most effective in chronic anal fissure management. It is effective and cure the disease in nearly all patients with good patient satisfaction.The complications are minimal and negligible.Complications are more common with manual anal dilatation than lateral internal sphincterotomy. Recurrence was found to be more with manual anal dilatation than lateral internal sphincterotomy. Our study establishes that lateral internal sphincterotomy is the treatment of choice for chronic anal fissure because of its simplicity better healing rates and better patient satisfaction minimal morbidity and low complication rates.

Conservative management using 2% Diltiazem ointment is the first line of treatment for acute anal fissure patients. Nonoperative treatment for chronic anal fissure may be applied with chance of cure and better in early cases.

Ethical approval

Approval has been taken from the ethical committee, government medical college, Ongole.

Acknowledgements

We would like to acknowledge the principal, GMC Ongole, the medical superintendent, GGH, Ongole Professor and HOD, Department of general surgery for their support during this study. We would like to extend our acknowledgements to T. Suman, interns and especially our patients and their families.

Conflict of Interest: Nil

Source of support: Nil

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